

Appendix B

Statement of Work for Remedial Action

Alcoa/(Point Comfort)/Lavaca Bay Superfund Site

STATEMENT OF WORK

ALCOA (POINT COMFORT)/LAVACA BAY SITE POINT COMFORT, TEXAS

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STATEMENT OF WORK FOR REMEDIAL ACTION

ALCOA (POINT COMFORT)/LAVACA BAY SUPERFUND SITE POINT COMFORT, CALHOUN COUNTY, TEXAS

I. INTRODUCTION

A. PURPOSE OF THE STATEMENT OF WORK

This Statement of Work (SOW) is an attachment to the Consent Decree (CD) for the Alcoa (Point Comfort)/Lavaca Bay Superfund Site. The purpose of the SOW is to set forth requirements for implementation of the remedial action (RA) selected in the Record of Decision (ROD) for the Alcoa (Point Comfort)/Lavaca Bay Superfund Site (Site) signed by the Director of the Superfund Division, EPA Region 6, on December 20, 2001. Settling Defendants shall follow the ROD, the CD, this SOW, the EPA-approved final Remedial Design Reports (RDRs) and the EPA-approved final Operations, Maintenance and Monitoring Plans (OMMPs), the EPA-approved final RA Workplan, and any additional guidance provided by EPA in submitting deliverables and implementing the remedy at the Site.

B. SITE DESCRIPTION

The Site shall refer to the definition of "Site" as provided in the CD and as described more fully in the ROD.

II. OVERVIEW OF REMEDIAL ACTION AND PERFORMANCE STANDARDS

A. REMEDIAL ACTION OBJECTIVES

Lavaca Bay

The RAOs for Lavaca Bay are to (1) eliminate or reduce to the maximum extent practical mercury loading from on-going unpermitted sources to Lavaca Bay; (2) reduce to an appropriate level mercury in surface sediments in sensitive habitats; and (3) reduce to an appropriate level mercury in surface sediments in open-water that represent a pathway by which mercury may be introduced into the food chain. These objectives are designed to allow the reduction of mercury levels in fish tissue such that the overall risk throughout Lavaca Bay will approach that which would be present but for the historic Point Comfort Operations.

Chlor-Alkali Process Area Soils

The general RAO for CAPA soils is to reduce the future exposure potential of site workers (e.g., construction worker, general industrial worker, and maintenance worker) to mercury in soils in the Building R-300 vicinity. The exposure pathways considered when developing the RAOs are the incidental ingestion of and dermal contact with soils. The RAO for CAPA soils does not include reducing the potential for ongoing leaching of mercury for these soils to underlying ground water, since control of CAPA ground water discharge to the bay will be performed as part of the Bay remedial action alternative.

Witco Soils

The RAO for soils in the Witco Area is to reduce the future exposure potential of site workers (e.g., construction worker, general industrial worker, and maintenance worker) to PAHs in surficial soils at the Stormwater Sump and Separator Area and Former Tank Farm Area. The exposure pathways considered when developing the RAO are incidental ingestion of and dermal contact with soils.

B. REMEDY SELECTED IN THE DECEMBER 20, 2001 RECORD OF DECISION

The ROD sets forth the selected remedy for the Site, which involves actions to address mercury- and PAH-contaminated sediments in Lavaca Bay, ongoing unpermitted discharges of mercury and PAHs into Lavaca Bay, and soil contamination at the former Chlor-alkali Process Area and soil contamination at the former Witco Area. The selected remedy is a comprehensive approach for the Site and addresses all current and potential future risks caused by ground water, sediment and soil contamination.

The major components of this remedy are:

Bay System

- **Extraction and Treatment of Chlor-Alkali Process Area (CAPA) Ground Water -** CAPA ground water will be hydraulically controlled by a series of four extraction wells. Treatment of the extracted ground water will be performed by aeration using an air stripper for removal of carbon tetrachloride, followed by carbon adsorption for mercury removal. The treated ground water will be discharged to Lavaca Bay.
- **Installation of a DNAPL Containment System at the Witco Area -** West of the former Witco Tank Farm Area, a containment system will be installed for the purpose of intercepting DNAPL potentially migrating to Lavaca Bay. Recovered DNAPL will be collected and sent off site for treatment and disposal at a licensed disposal facility. The DNAPL will not be treated or stabilized on site prior to off site disposal. The specific areas of shoreline to be addressed by a remedy may be modified based on site conditions observed during remedy implementation. Design of the DNAPL containment system is

established in the RDR.

- **Dredging of the Witco Channel** - approximately 200,000 cubic yards of mercury-contaminated sediment were dredged between December 2001 and January 2002 and disposed of in an on site confined disposal facility located on Dredge Island consistent with the remedy selected in the ROD and the terms of the Administrative Order on Consent for Remedial Investigation/Feasibility Study/Removal Action (AOC). Consistent with the remedy selected in the ROD, the dredged sediments were not treated or stabilized before disposal. A final cover for the disposal areas will consist of dredged material taken from an area of Lavaca Bay that has mercury concentrations below human health and ecological risk-based values.
- **Remediation of the Witco Marsh by Dredging or Filling** - the Witco Marsh will be actively remediated (dredged) to address the concern of biological uptake of mercury. Approximately 30,000-60,000 cubic yards of sediment will be dredged and disposed of in an on site confined disposal facility on Dredge Island. Consistent with the remedy selected in the ROD, the dredged sediments will not be treated or stabilized before disposal.
- **Enhanced Natural Recovery North of Dredge Island** - a targeted area north of Dredge Island will receive a thin cap to accelerate the natural recovery process currently observed occurring in Lavaca Bay.
- **Natural Recovery of Sediments** - sediments that are not actively remediated will recover to acceptable levels through sedimentation and other natural recovery processes. It is estimated that natural recovery of sediments, in concert with other elements of the remedy, will achieve within approximately ten (10) years the reduction of mercury levels in fish tissue such that the overall risk throughout Lavaca Bay will approach that which would be present but for the historic Point Comfort Operations.
- **Institutional Controls to Manage Exposure to Finfish/Shellfish** - the fish closure originally established by the Texas Department of Health ("TDH") in 1988 and updated in January 2000 will remain in place to control the consumption of finfish and shellfish for the "Closed Area" until levels of mercury decrease to levels determined by TDH to be acceptable for human consumption.
- **Monitoring** - long term monitoring of sediments and fish will be required to confirm the recovery of sediment and fish tissue to acceptable levels. In addition, monitoring of surface water will be conducted to evaluate the effectiveness of the CAPA hydraulic containment system. Full details of the monitoring program, including statistical interpretation requirements to determine whether or not acceptable levels have been achieved, are established in the OMMPs.

Chlor-Alkali Process Area Soils

- **Building R-300 Removal** - Building R-300 was removed and disposed off-site consistent with the remedy selected in the ROD and the terms of the AOC. (This component of the remedial action has been completed pursuant to Paragraph 59 of the RI/FS Administrative Order on Consent).
- **Capping of Building R-300 Area** - The building slab and the area immediately west of Building R-300 was capped with a clay sublayer covered by crushed rock. (This component of the remedial action has been completed pursuant to Paragraph 59 of the RI/FS Administrative Order on Consent).
- **Institutional Controls to Manage Exposure to Soil** - Excavation of any soils below or immediately west of Building R-300 will only be permitted after a worker safety program is developed for the specific excavation activity and repair of the cap would be required after excavation. Deed records will be filed showing the areal extent of soil with elevated mercury levels in the Building R-300 area.

Former Witco Area Soils

- **Capping** - the Stormwater Sump and Separator Area and Former Tank Farm Area will be capped with soil caps.
- **Institutional Controls to Manage Exposure to Soil** - future excavation of any soils in the capped areas will only be permitted after a worker safety program is developed for the specific excavation activity and repair of the cap would be required after excavation. Deed records will be filed showing the areal extent of soil with elevated PAH concentrations in this area.

C. PERFORMANCE OBJECTIVES AND STANDARDS

The term "Performance Standards" refers to clean up standards, standards of control, quality criteria, and other substantive requirements, criteria, or limitations including all Applicable or Relevant and Appropriate Requirements (ARARs) set forth in the December 20, 2001 ROD. Performance Standards include but are not limited to the remedial action objectives set forth in the ROD, the remedial action goals set forth in the ROD, or other measures of achievement of the goals of the Remedial Action.

D. REMEDIAL DESIGN REPORTS (RDRs) AND OPERATIONS, MAINTENANCE AND MONITORING PLANS (OMMPs)

The RDRs detail the specific performance criteria which apply to design and construction of the selected remedy described in the ROD. The OMMPs detail two aspects of monitoring of

the remedy. Operation and Maintenance refers to activities necessary to protect the integrity of the remedy and to evaluate system performance. The Operation and Maintenance measures are discussed more fully in Section IV D 2 of this SOW. Monitoring Plans detail the Performance Monitoring activities which are required after construction of various components of the remedy are completed, to determine whether the RAOs have been met for the site. Performance Monitoring is discussed more fully in Section IV D 3 of this SOW. The following RDRs and OMMPs have been reviewed by EPA and the Texas Commission on Environmental Quality (TCEQ), have been approved, and are attached and incorporated as appendices to this SOW:

- Chlor Alkali Process Area Ground Water Remedial Design Report and Operations, Maintenance, and Monitoring Plan (September 2003)("CAPA Ground Water RDR/OMMP")(Appendix A);
- Former Witco Tank Farm Area Dense Non-Aqueous Phase Liquid (DNAPL) Containment System Remedial Design Report and Operations, Maintenance, and Monitoring Plan (September 2003)("Witco DNAPL RDR/OMMP")(Appendix B);
- North of Dredge Island Enhanced Natural Recovery Remedial Design Report (September 2003)("Dredge Island RDR")(Appendix C);
- Dredge Island Operations, Maintenance and Monitoring Plan (September 2003)("Dredge Island OMMP")(Appendix D);
- Witco Marsh Remediation Remedial Design Report (September 2003) ("Witco Marsh RDR") (Appendix E);
- Chlor-Alkali Process Area (CAPA) Soils Remedial Design Report and Operations, Maintenance and Monitoring Plan (September 2003)("CAPA Soils RDR/OMMP") (Appendix F);
- Witco Area Soils Remedial Design Report and Operations, Maintenance and Monitoring Plan (September 2003)("Witco Area Soils RDR/OMMP")(Appendix G)
- Lavaca Bay Sediment Remediation and Long-Term Monitoring Plan Operations, Maintenance, and Monitoring Plan (September 2003)("Lavaca Bay Sediment OMMP")(Appendix H);
- Lavaca Bay Finfish and Shellfish Operations, Maintenance and Monitoring Plan (October 2003)("Lavaca Bay Finfish and Shellfish OMMP")(Appendix I).

Settling Defendant shall implement the RA to meet all performance objectives and standards set forth in the ROD and this SOW.

The components of the remedy for the Bay System, Chlor-Alkali Process Area Soils and Witco Area Soils are as follows:

1 BAY SYSTEM

- a. **Extraction and Treatment of Chlor-Alkali Process Area (CAPA) Ground Water**

As part of the CAPA ground water treatability study, four ground water extraction wells were installed and operate to provide hydraulic control of ground water migration to the bay. Ground water collected from the wells is treated using an air stripper and carbon adsorption system and then discharged to Lavaca Bay. The system has been operating since 1998 and has been successful in reversing the ground water gradient in the area of CAPA. The hydraulic control system will continue to be operated as part of the remedial action for the Site. Monitoring of the treatment system effluent is performed on a regular basis. Surface water monitoring will be used to evaluate the effectiveness of the CAPA hydraulic control remedy. Specific construction and monitoring requirements are described in the attached EPA-approved final CAPA Ground Water RDR and OMMP.

b. Installation of a DNAPL Containment System at the Witco Area

West of the former Witco Tank Farm Area, a containment system will be installed for the purpose of intercepting DNAPL potentially migrating to Lavaca Bay. Recovered DNAPL will be collected and sent off site for treatment and disposal at a licensed disposal facility. The DNAPL will not be treated or stabilized on site prior to off site disposal. Specific construction requirements are described in the attached EPA-approved Witco DNAPL RDR/OMMP.

c. Dredging of the Witco Channel

Approximately 200,000 cubic yards of mercury-contaminated sediment were dredged between December 2001 and January 2002 and disposed of in an on site confined disposal facility located on Dredge Island. Consistent with the remedy selected in the ROD, the dredged sediments were not treated or stabilized before disposal. A final cover for the disposal areas will consist of maintenance dredge materials taken from an area of Lavaca Bay that has mercury concentrations below human health and ecological risk-based values.

d. Remediation of the Witco Marsh

The Witco Marsh will be actively remediated to abate biological uptake of mercury. Approximately 30,000-60,000 cubic yards of sediment in the Witco Marsh will be disposed of in an on site confined disposal facility located on Dredge Island. Consistent with the remedy selected in the ROD, the dredged sediments will not be treated or stabilized before disposal. Specific remedial measures are described in the attached EPA approved Witco Marsh RDR.

e. Enhanced Natural Recovery North of Dredge Island

A thin cap will be placed over a targeted area north of Dredge Island to accelerate

the natural recovery process currently occurring in the bay. Remedial measures are described more completely in the attached EPA-approved Dredge Island RDR.

f. Natural Recovery of Sediments

The RAOs for mercury in sediment have two quantitative target cleanup goals, depending on the location of the sediment. The target cleanup goals are:

- For sediments in fringe marsh-type habitat, eliminate the exposure pathway that is presented by sediments that on average exceed 0.25 ppm mercury.
- For sediments in open-water habitat, eliminate the exposure pathway that is presented by sediments that on average exceed 0.5 ppm mercury.

The RAO for PAHs is to reduce sediment concentrations to below the NOAA ER-M value, which equates to 44.8 ppm total PAH. PAHs exceed risk-based levels in isolated portions of the Closed Area. The areas where this concentration is exceeded are also areas where mercury is a potential concern.

Reductions in PAH concentrations will be accomplished through source control actions at the Witco area, mercury sediment removal actions, and natural recovery. Areas in the bay that have elevated PAH levels in sediments are expected to naturally recover to acceptable levels once the upland sources have been eliminated. Areas of concern in Lavaca Bay impacted by elevated mercury levels that are not actively remediated are expected to recover with time to acceptable levels due to natural recovery of the sediments through sedimentation. The areas of Lavaca Bay not addressed as part of the remedial alternative include the southern causeway marshes, areas bordering Settling Defendant's Industrial Channel, and the area southwest of Dredge Island. Remedial measures are further described in the attached EPA-approved Lavaca Bay Sediment OMMP, and Witco Marsh RDR.

g. Dredge Island Stabilization and Northern Marsh Removal

The Dredge Island stabilization project included relocating the contents of the DMPAs containing elevated levels of mercury (approximately 523,000 CY) into the GPAs. In addition, the containment dikes surrounding the GPAs were raised so they will not be overtopped during a severe storm (e.g., hurricane). This required increasing 10,700 linear feet of dike to an approximate elevation of 30 feet. The work began in September 1998 and was completed during the summer of 2001. A final cover for the disposal area will consist of maintenance dredge materials that have been approved for disposal consistent with Corps of Engineers permitting authorizations. A final removal report has been submitted to EPA

documenting completion of the non-time critical removal action. The plan to maintain and monitor the continued protectiveness of the non-time critical removal action is described in the attached EPA-approved Dredge Island OMMP.

h. Performance Monitoring

Long term monitoring of sediments and fish will be required to confirm the recovery of sediment and fish tissue to acceptable levels. In addition, monitoring of surface water will be conducted to evaluate the effectiveness of the CAPA hydraulic containment system. The monitoring plans for the site are described in the following EPA-approved final RDRs and OMMPs:

- CAPA Ground Water RDR/OMMP
- Lavaca Bay Sediment OMMP
- Lavaca Bay Finfish and Shellfish OMMP

2 CHLOR-ALKALI PROCESS AREA SOIL

The mercury concentration for soils for direct contact to be addressed by the RAO, described in the *CAPA Data Report*, is 466 mg/kg. In addition, the remedial action at the CAPA should address those areas of soil that exceed the TNRCC commercial/industrial soil protection concentration limit for mercury (adjusted for consideration of occupational air standards for on-site workers) of 180 mg/kg. Final plans and specifications for remedial measures are described in the attached EPA-approved CAPA Soils RDR/OMMP.

3 WITCO SOILS

For the seven carcinogenic PAHs, the following preliminary remediation goals are presented as cleanup levels for the Witco Area soils.

Benz(a)anthracene	32 mg/kg
Benzo(a)pyrene	3.2 mg/kg
Benzo(b)fluoranthene	32 mg/kg
Benzo(k)fluoranthene	320 mg/kg
Chrysene	3200 mg/kg
Dibenz(a,h)anthracene	3.2 mg/kg
Indeno(1,2,3-c,d)pyrene	32 mg/kg

Final plans and specifications for remedial measures are described in the attached EPA-approved Witco Soils RDR/OMMP.

E. ELEMENTS OF REMEDIATION

Settling Defendants shall perform all Remedial Action, Performance Monitoring, and Operation and Maintenance required by the Consent Decree and this Statement of Work. Activities conducted pursuant to the Consent Decree and the Statement of Work shall achieve the ARARs and Performance Standards selected in the ROD, including cleanup standards, standards of control, quality criteria, and other substantive requirements, criteria or limitations set forth in the ROD. Settling Defendants shall carry out the Work in accordance with work plans approved in advance by EPA.

III. GENERAL REQUIREMENTS FOR RD/RA

- A. All plans, reports, and other deliverables required by the Consent Decree or this SOW shall be submitted to EPA for review and approval in accordance with Section XI (EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS) of the Consent Decree.
- B. The Settling Defendants shall furnish all necessary and appropriate personnel, materials, and services needed for, or incidental to, conducting and monitoring the performance of the RA set forth in the ROD, this SOW, and the EPA-approved final RDRs and OMMPs.
- C. The Project Manager for the Settling Defendants shall communicate regularly (at least weekly during remedy construction) with the EPA Project Manager either in face-to-face meetings or through conference calls. The Settling Defendants shall document all decisions that are made in meetings and conversations with EPA. The Settling Defendants shall forward this documentation to the EPA Project Manager within seven working days after the meeting or conversation.
- D. Meeting Participation and Routine Communications. As needed, the Settling Defendants shall attend project meetings, provide documentation of meeting results, and shall contact the EPA Project Manager to report project status. The Settling Defendants shall participate in monthly construction meetings with EPA during remedy construction. Participants should also include Settling Defendants' prime contractor.
- E. EPA will provide oversight of Settling Defendants' activities throughout the RD/RA. EPA's review and approval of deliverables is administrative in nature and allows the Settling Defendants to proceed to the next steps in implementing the work. EPA's approval does not imply any warranty of performance, nor does it imply that the remedy, when constructed, will meet Performance Standards, nor does it imply that the remedy will function properly and be accepted by EPA. Acceptance of plans, specifications, and design-required submittals by EPA does not relieve the Settling Defendants or their contractors of responsibility for the adequacy of the design or from their professional responsibilities.
- F. The Settling Defendants shall maintain all technical records for the RD/RA in accordance

with the Consent Decree. At the completion of the RD/RA, the Settling Defendants shall submit three (3) copies of the RD/RA records in hard copy and one copy in electronic format to the EPA Project Manager.

- G. The Settling Defendants shall provide office space for the EPA Project Manager and EPA-authorized oversight officials at the Site if the Settling Defendants or their contractor have office space at the Site. If no office space is established at the Site, the Settling Defendants shall provide office space for the EPA Project Manager and EPA-authorized oversight officials in proximity to the Settling Defendants' field-operation office near the Site.

IV. KEY PERSONNEL

A. DESIGNATION OF PROJECT COORDINATOR

Settling Defendants shall designate its Project Coordinator in accordance with Section XII (PROJECT COORDINATORS) of the Consent Decree.

B. DESIGNATION OF SUPERVISING CONTRACTOR

Settling Defendants shall notify EPA of its proposed Supervising Contractor in accordance with Section VI (PERFORMANCE OF THE WORK BY SETTLING DEFENDANTS) of the Consent Decree.

C. DESIGNATION OF THE REMEDIAL ACTION QUALITY ASSURANCE OFFICIAL

Within 30 days after lodging of this Consent Decree, Settling Defendants shall submit in writing to EPA the name, title, address, and telephone number of the RA Quality Assurance Official (QAO) and of key personnel with Settling Defendants' staff with quality assurance responsibilities. The QAO shall oversee the construction of the remedial action and provide confirmation/assurance to Settling Defendants and EPA that the selected remedy is constructed to meet quality assurance project requirements and in accordance with the project plans and specifications. The QAO shall prepare and implement the Construction Quality Assurance Plan. The QAO shall be independent and autonomous from the Remedial Action Contractor. The QAO may be a member of Settling Defendants' staff, the Supervising Contractor's staff, or an independent contractor.

V. TASKS TO BE PERFORMED

Settling Defendants shall implement the Work specified in the CD, this SOW, the attached EPA-approved RDRs and OMMs, and the RA Work Plan to achieve the requirements of the ROD. Settling Defendants shall achieve the ROD requirements to assure protection of human health

and the environment. Each element of the work shall be integrated and coordinated with all other elements of the work, and with all other ongoing operations and/or tasks, in order to: 1) conduct the various remedial construction components simultaneously and 2) complete all remedial construction activities as expeditiously as possible. Work at the Site will generally be performed in the following sequence: 1) remedial action construction, 2) remedial action operation or implementation, 3) performance monitoring, and 4) operation and maintenance. To achieve optimization of individual components of the remedy, some elements of remediation may follow an iterative approach if a need for optimization is identified during performance monitoring. For each component of the remedial action, when EPA has approved one step in the sequence of work, Settling Defendants shall proceed to the next step in the sequence of work on that component. At a minimum, Settling Defendants shall perform the following tasks:

A. COMMUNITY RELATIONS

Settling Defendants shall support EPA as set forth in Section XXX (COMMUNITY RELATIONS) of the Consent Decree. Settling Defendants will continue to provide EPA with community relations support which is consistent with that which has been in place throughout the RI/FS.

B. REMEDIAL ACTION WORKPLAN

Settling Defendants shall submit a Remedial Action Work Plan (RAWP) as set forth in Section VI (PERFORMANCE OF THE WORK BY SETTLING DEFENDANTS) of the Consent Decree. The RAWP shall include a detailed description of construction activities, operation and maintenance, performance monitoring, and an overall management strategy for the RA. In providing the framework for implementation of these activities, the RAWP shall specifically address all items listed below. The attached RDRs/OMMPs contain many of the elements of the RAWP outlined below, and may be incorporated or referenced as needed in the RAWP.

1. **Detailed RA Schedule:** the RAWP shall contain a schedule for conducting activities required by this SOW in accordance with the schedule set forth in Section VI of this SOW.

2. **Construction of Site Remediation:** The RAWP shall describe all construction activities of the remedy as set forth in the final EPA-approved RDRs and OMMPs, and any other elements of remedial construction specified in the ROD.

3. **General Remedial Action Operation and Implementation Requirements**

- a. Plans for identification of and satisfactory compliance with permitting requirements (if needed);
- b. A clear and concise description of the roles, relationships, and assignment of responsibilities among the Settling Defendants' Project Coordinator, QA Official, Supervising Contractor, and the Remedial Action Contractor;
- c. Procedures and plans for the decontamination of equipment and disposal of

contaminated materials;

- d. Methodology to provide information on testing laboratory services;
- e. Methodology for implementation of institutional controls;
- f. Methodology for implementation of the OMMPs;
- g. Methodology for implementation of the Performance Monitoring Plan;
- h. Procedures for transportation and off-site disposal;
- i. Procedures for pre-final inspection.

4. Remedial Action Team Organization

- a. Procedures for selection of the Remedial Action contractor(s);
- b. Procedures for execution of the contract for completion of the Remedial Action;
- c. Formulation of the RA team (this shall include a clear and concise description of the roles and relationships for management and oversight of the project among Settling Defendants, Project Coordinator, RA Quality Assurance Official, Supervising Contractor and RA Contractor).

C. OTHER PLANS

Settling Defendants, at a minimum, shall also submit, in accordance with the schedule in the RAWP (or the schedule contained within this SOW), the following plans for performance of selected activities at the Site, together with any other plans required by the Approved Remedial Design documents and/or the RAWP. Since many of the RDRs/OMMPs contain significant detail related to the RD/RA activities and associated monitoring, the following plans may have varying levels of detail and may incorporate or reference the RDRs/OMMPs as needed.

1. **Construction Management Plan:** At least 30 days before construction mobilization, Settling Defendants shall submit the Construction Management (CM) Plan to EPA. The CM Plan shall include the Construction Quality Assurance Plan (CQAP) and the confirmation sampling plan. The confirmation sampling plan shall consist of a field sampling plan and a quality assurance project plan specific to the confirmation effort. The CM Plan shall also include a definition of roles and responsibilities of key project personnel and reporting and documentation requirements. The CQAP shall describe the inspection and documentation of remedial construction activities to provide assurance that the completed construction will meet or exceed the required design criteria. The CQAP will establish the lines of responsibility and authority in the construction program, specify inspections and tests to be performed during the construction of each component of the remedial construction, define procedures for evaluating materials and workmanship and provide the requirements for documentation of construction quality assurance activities.

2. **Health and Safety Plan (HASP):** for Remedial Action activities to be prepared in conformance with applicable Occupational Safety and Health Administration (OSHA), Mine

Safety Health Administration (MSHA), and EPA requirements including 29 C.F.R. 1910. EPA shall not approve or disapprove the HASP, but shall review it to assure its existence and shall require compliance by Settling Defendants with its terms as part of the Consent Decree.

3. **Site Management Plan:** This plan provides EPA with a written understanding of how access, security, health and safety, contingency procedures, management responsibilities, and waste disposal are to be handled during construction. The Settling Defendants shall update the plan, as necessary, to incorporate any subcontractors' plans.

4. **Pollution Control and Mitigation Plan:** Outlines the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released off-site during the implementation of the RA. Any plans and procedures prepared during the RD should be referenced or adapted whenever possible (i.e., sediment and erosion control plan).

5. **Waste Management Plan:** This plan outlines how wastes that are encountered during the RA will be managed and disposed of. The Settling Defendants shall specify the procedures that will be followed when wastes will be managed including storage, treatment and/or disposal.

D. SITE REMEDIATION

Settling Defendants shall initiate construction and Site remediation in accordance with the final EPA-approved RDRs, the Remedial Action Work Plan, and any other EPA-approved plans. Site remediation consists of all activities required to successfully implement the ROD and the EPA-approved RDRs and all activities necessary to meet the performance standards as set forth in the ROD, and this SOW.

1. Construction and Implementation of Source Control Portions of Remedy

The activities required to implement the ROD are specified in the EPA-approved RDRs. The activities and schedule for performance of activities will be set forth in the RAWP. Elements of the work to be performed include:

- a. Installation of a DNAPL containment and collection system at the Witco Area. The actions to be taken are described in the attached Witco DNAPL RDR/OMMP.
- b. Enhanced natural recovery of Lavaca Bay sediments north of Dredge Island. The placement of a thin layer cap to enhance natural recovery is presented in the attached Dredge Island RDR.
- c. Dredging of the Witco Marsh. The actions to be undertaken at the Witco Marsh are presented in the attached Witco Marsh RDR.
- d. Capping of soils at the former Witco Area Tank Farm and Sump and Separator

Area. The work to be conducted is defined in the attached Witco Soils RDR.

e. Extraction and Treatment of CAPA Ground Water. The actions to be undertaken at the CAPA are presented in the attached CAPA Ground Water RDR/OMMP.

f. Dredging of Witco Channel. Approximately 200,000 cubic yards of mercury-contaminated sediment were dredged between December 2001 and January 2002 and disposed of in an on site confined disposal facility located on Dredge Island. Consistent with the remedy selected in the ROD, the dredged sediments were not treated or stabilized before disposal. A final cover for the disposal areas will consist of dredged material taken from an area of Lavaca Bay that has mercury concentrations below human health and ecological risk-based values.

g. Building R-300 Removal and Capping of R-300 Area. The R-300 Building was removed and disposed off-site and the Building R-300 area was capped consistent with the remedy selected in the ROD and Paragraph 59 of the RI/FS Administrative Order on Consent.

h. Natural Recovery of Sediments. The work to be undertaken is described in the attached Lavaca Bay Sediment OMMP.

2. Operation and Maintenance

Operation and Maintenance measures will be initiated under this task to undertake the activities necessary after construction of components of the selected remedy is completed to protect the integrity of the remedy and to evaluate system performance. The EPA-approved OMMPs are attached as appendices to this SOW. Components of the remedy requiring near-term O&M include:

a. System Monitoring of the CAPA Ground Water Extraction System which is presented in the attached CAPA Ground Water RDR/OMMP.

b. Periodic inspections on Dredge Island as detailed in the attached Dredge Island OMMP.

c. Operation and Maintenance activities of the CAPA soil cap described in the CAPA Soils RDR/OMMP.

d. Former Witco Area Soils O&M requirements as presented in the attached Witco Soils RDR/OMMP.

3. Performance Monitoring

Performance Monitoring shall include all activities described in the OMMPs, which are required after construction of components of the remedial action is completed, to

determine whether the RAOs have been met for the site. Components of the remedy requiring Performance Monitoring include:

- a. Lavaca Bay Sediment Remediation and Monitoring described in the attached Lavaca Bay Sediment OMMP;
- b. Finfish and Shellfish Monitoring presented in the attached Lavaca Bay Finfish and Shellfish OMMP;
- c. CAPA Ground Water Extraction System monitoring presented in the attached CAPA Ground Water RDR/OMMP.

E. ATTAINMENT OF PERFORMANCE STANDARDS

Settling Defendants shall continue RA and Performance Monitoring until the Performance Standards described in the ROD and the SOW, are attained.

F. REPORTING

1. Monthly Progress Reports

The Settling Defendants shall prepare and send to the EPA Project Manager monthly status reports documenting the status of each task, beginning in the month following entry of the Consent Decree and ending with the month following issuance of the Certificate of Completion. In lieu of a monthly progress report, Settling Defendants may provide detailed meeting minutes. The written progress reports shall address the following topics as applicable with respect to each reporting period:

- Progress made - describe the actions which have been taken toward achieving compliance with the CD, SOW, and completion of the RA during the previous month
- Problems resolved
- Problem areas and recommended solutions-describe efforts made to mitigate delays or anticipated delays
- Deliverables submitted - identify all deliverables required by the CD and this SOW submitted during the previous month
- Schedule updates - include any modifications to the work plans or schedules that Settling Defendants proposed to EPA or that have been approved by EPA
- Activities planned for the next six (6) weeks
- Contracting status
- Laboratory activities - Identify laboratories, number and type of samples shipped to each, analyses requested, and data packages received. Include a summary of all results of sampling and tests and all other data received or generated by Settling Defendants, or its contractors or agents in the previous month

- Validation results
- Summary of key personnel changes
- Community relations support activities - Describe all community relations activities undertaken or planned
- Description of data collected relating to the Site, not only that data specifically required by this SOW
- Quantity of waste generated and quantity of waste disposed
- Health and safety issues
- Status of material submittals.

2. RA Annual Effectiveness Report:

The Settling Defendants shall prepare and send to the EPA Project Manager annually a Remedial Action Annual Effectiveness Report beginning one year following entry of the Consent Decree and ending with the issuance of the Certificate of Completion of Work. The Remedial Action Annual Effectiveness Report shall be prepared to evaluate the effectiveness of the RA including, but not limited to, an evaluation of the performance of the hydraulic control system at CAPA, natural recovery of sediments in Lavaca Bay, trends in fish/shellfish tissue values, and an evaluation of O&M activities. In preparing the report, Settling Defendants shall use the O&M and Performance Monitoring data collected and any data collected during construction of the remedy. The Annual Effectiveness Report shall be submitted to EPA in accordance with the schedule contained in the Remedial Action Work Plan. Topics to be discussed in the RA Annual Effectiveness Report include:

- a. Site Information: This includes identifying information, treatment application, background and site contacts;
- b. Media Description: Describe affected media, contaminant characterization, and media characteristics affecting cost and performance;
- c. Treatment System Description: Discusses the primary treatment/remediation technology, system description and operation, operating parameters affecting treatment costs and performance, and a timeline;
- d. Treatment System Performance: Includes the cleanup goals/standards, treatment performance goals, performance data assessment, performance data completeness, and performance data quality;
- e. Observations and lessons learned;
- f. Verification that site conditions have not changed and that there has been no land use or development that may affect the remedial action.

The Settling Defendants shall respond to any comments and prepare the final report within 30 days of receipt of comments.

VI. COMPLETION OF REMEDIAL ACTION

A. CERTIFICATION OF COMPLETION OF REMEDIAL ACTION

As set forth in Section XIV (CERTIFICATION OF COMPLETION) of the Consent Decree, Settling Defendants shall schedule and conduct a pre-Certification Inspection and prepare an Interim Remedial Action Report. A Final Remedial Action Report will be submitted when all cleanup goals specified in the ROD have been achieved.

1. PRE-CERTIFICATION

Upon completion of the remedial action, the Settling Defendants shall schedule and conduct a Pre-Certification Inspection. Participants shall include the EPA Project Coordinator, Supervising Contractor, Construction Contractor, and other federal, state, and local agencies with a jurisdictional interest invited by EPA. The objective of the inspection is to determine if the RA has been fully performed in accordance with the terms of the Consent Decree.

2. INTERIM REMEDIAL ACTION REPORT

Within thirty days following the conclusion of the Pre-Certification Inspection, Settling Defendants shall submit a draft Interim Remedial Action Report to EPA. EPA will provide comments on the draft report to Settling Defendants. Within thirty days of receipt of EPA's comments, Settling Defendants shall submit a final Interim Remedial Action Report to EPA. The Interim Remedial Action Report shall contain the information described in OSWER Directive 9320.2-09A-P, "*Close Out Procedures for National Priorities List Sites*".

B. CERTIFICATION OF COMPLETION OF WORK

As set forth in Section XIV (CERTIFICATION OF COMPLETION) of the Consent Decree, Settling Defendants shall schedule and conduct a pre-certification inspection and prepare a Completion of Work Report.

VII. SCHEDULE

The following deliverables are set by the schedule outlined below. Other deliverables required by the Consent Decree and the SOW that are not addressed below must be included in the schedule required in the RAWP. For all submittals requiring EPA approval for which a response time is not specifically provided in this schedule or in the RAWP, EPA shall have a minimum of twenty-one days to review the submittal. In the event that any performance by Settling Defendants is directly dependent upon receipt of EPA comments or approval (or disapproval), for each day of EPA's delay in providing comments or approval (or

disapproval), Settling Defendants' obligation to perform the dependent act shall be extended one day. The schedule below may be modified in accordance with Section XXXI (MODIFICATION) of the Consent Decree. Requests for modification made by Settling Defendants shall include a discussion of the reason for the request, and any impact the proposed change in the schedule may have on the schedule, subsequent deliverables, or milestone events.

DELIVERABLE/ACTIVITY	DELIVERY DATE
Identification of Project Coordinator	20 days from lodging date of Consent Decree
Submit Revised Community Relations Plan	30 days from entry date of Consent Decree
Submit Draft Remedial Action Work Plan (RAWP)	30 days from Settling Defendants' selection of Project Coordinator
EPA Comments on Draft RAWP	30 days from receipt of draft RAWP
Submit Final RAWP	30 days after EPA comments
Conduct Pre-Certification Inspection for Remedial Action	Within 90 days after Settling Defendants conclude that Remedial Action has been fully performed
Submit Interim Remedial Action Report	30 days following conclusion of Pre-Certification inspection for Remedial Action.
Conduct Pre-Certification Inspection for Completion of Work	Within 90 days after Settling Defendants conclude that all phases of work (including O&M) have been fully performed.
Submit Completion of Work Report	30 days following conclusion of Pre-Certification inspection for Completion of Work
Periodic Deliverables	
Monthly Progress Reports	To be submitted by the 10 th of each month
Remedial Action Annual Effectiveness Report	Annually beginning one year following entry of the Consent Decree and ending with the issuance of the Certificate of Completion of Work.